III. *Notice on a peculiar Property of a Species of Echinus. By E. T. Bennett, Esq. F.L.S. Communicated by the Zoological Club of the Linnean Society.*

*Read June* 21, 1825.

The property of forming for themselves habitations or cells in stone or other hard substances, with which Nature has endowed certain of the less perfect animals, has repeatedly excited the investigation of zoologists, who are yet divided in opinion as to the means by which it is effected. While some are disposed to regard these cavities as the result chiefly of chemical action, others consider them to be produced by mechanical powers alone. Into this extensive question it is by no means my intention to enter: I merely propose to put on record, for future and more able inquirers, a fact which has recently come to my knowledge, and which is new to those scientific friends whom I have consulted respecting it.

On the surface of a fragment of rock from the coast of the county of Clare, for which I am indebted to the kindness of Mr. J. D. Humphreys of Cork, there exist numerous depressions or cavities, occupied by a species of *Echinus*, and evidently formed by it, as they severally correspond in size with the stage of growth of their respective inhabitants. The fragment, which is about eight inches in length by six in breadth, contains in less than one half of its surface six of these cavities,—each of which is circular,—agreeing in form with that of the *Echinus* which occupies

occupies it, and so deep as to embrace more than two-thirds of the bulk of its animal inhabitant. They are large enough to admit of the animal rising in them a little, but not of its coming out easily; and their depth is in several considerably increased by the deposition, around their upper circumference, of a species of coralline several lines in thickness, and by a thin layer of which they are frequently lined throughout. In common with all the other species, the *Echini* inhabiting these cells have their mouths invariably downwards; and they adhere by their numerous suckers so firmly to the lodgements they have formed, as to be forced, with extreme difficulty, from them when alive.

"The coast of the county of Clare," Mr. Humphreys informs me, "at Milltown Malbay, and indeed from the mouth of the Shannon northward to the isles of Arran, is without a harbour, and, except a few bays of fine sand, presents to the eye the most majestic cliffs. Wherever the rocks project into the sea, so as to form ledges accessible at low water, protected in front by higher rocks, and which are never left entirely dry, these ledges are perforated by the *Echini;* and I have seen thousands of them lying in these cavities side by side. The largest which I saw thus imbedded were about three inches in diameter; and the few that I perceived out of their *nidi* were dead. All that I thus observed were of the same species. The fishermen sometimes take the common *Echinus* in their lobster-pots, but these are never lodged in the rock. I have been lately informed that they lodge in a similar manner in the rocks about Berehaven and Bantry in the west of our county (Cork), and I shall endeavour to obtain further information respecting their habits from thence."

The animal whose interesting habits have formed the subject of

the present notice appears to be the *Echinus saxatilis* of Linnæus; but the character assigned to this species by that distinguished naturalist is so indefinite as to preclude the possibility of certainty on this point. It however coincides precisely with the description given by Leske of his *Cidaris rupestris*, and with Lamarck's specific character of his *Echinus lividus;* both of these authors (the latter with a mark of doubt) referring to this species of Linnæus as synonymous with theirs respectively. The appositeness of the trivial names both of Linnæus and of Leske to the habitat of the animal in question, might lead to the suspicion that they were acquainted with the property noticed above: but there is no reference in either of them to any author by whom it has been mentioned. Rumphius, indeed, describes the *Echinus saxatilis* as inhabiting "the holes and cavities of corals, in which they sometimes grow to such a size that it is impossible to pull them out." But these words evidently imply his opinion that it sought holes previously formed, in which it increased in bulk; and do not even hint at the conclusion, that itself formed and enlarged the cells in which it dwelt.

Whether the species of *Echinus* described and figured by Rumphius, and referred to by Linnæus as synonymous with his *E. saxatilis*, be identical with the one which inhabits the western coasts of Ireland, may probably, on account of their geographical distribution, be regarded as doubtful, the former having been discovered in the Indian Seas. The species of this genus are, however, so difficult to determine, and so little understood, that I will not at present venture to decide upon this question. If not identical, they are at least analogous; and I may mention as a fact bearing upon this point, that I have lately seen a specimen of *Echinus*, brought by Captain King, F.L.S., from New Holland,

Holland, to which it would be extremely difficult, if not impossible, to assign characters capable of distinguishing it from our common *E. esculentus*.

It may be proper to add, that the species which perforates the rocks of the western coasts of Ireland has not hitherto been described as an inhabitant of the British isles.

IV. *A Com-*